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ABSTRACT

Although there is extensive literature on interpersonal influence in counseling, there are few studies of the relative influence of counselors on clients and clients on counselors. To investigate the convergent validity of three statistical approaches to relative influence in counseling, 57 counseling interviews were analyzed. The three statistical indices of influence were computed on the counselor-client verbal interactions: Tracey and Ray's topic determination (i.e., ratio of person's topic initiation successes to total number of topic initiations); Goodman and Kruskal's asymmetrical lambda (i.e., the relative decrease in the unpredictability of a consequent behavior when the antecedent behavior is known); and Shannon and Weaver's ambiguity index (i.e., the uncertainty of a response). Analysis of results showed agreement was greatest (80 percent) between the topic determination and ambiguity indexes. There was little agreement (9 percent) between the asymmetrical lambda statistic and the other indices. While the lambda statistic appeared unusable as a measure of influence in this study it may be useful with broader response categories and less biased responding. (KGB)

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Convergent Validity of Three Indices of Interpersonal Influence in Counseling

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Abstract

This study investigated the convergent validity (instrument agreeement) of three statistical approaches to the study of the relative influence of counselors and clients in counseling. The three statistical indices--Tracey's topic determination index, Goodman and Kruskal's asymmetrical lambda statistic and Shannon and Weaver's ambiguity index--were computed on the verbal interactions of 57 actual counseling interviews. For all three measures, influence was defined as the extent to which the client and counselor mediate each other's topical behavior in counseling. Significant agreement among the indices was found only for the topic determination and the ambiguity indices.

Convergent Validity of Three Indices of Interpersonal Influence in Counseling

Counseling, like other interpersonal relationships, rest on the presumption of communication (verbal and/or nonverbal) between the counselor and client. While considerable research has been devoted to investigating the components of "good" communication and "good" communicators (e.g., Gazda, Asbury, Balzer, Childers & Walters, 1977; Ivey & Authier, 1978), much less attention has been given to the dynamics of such communication. Operationally, from a dynamic perspective, communication is said to occur (or be occurring) between persons whenever they behave in a non-random manner with respect to each other. More specifically, communication between persons means that their respective behaviors are, at least to some extent, dependent on or influenced by the preceding actions of the other(s). Indeed, were this not the case (i.e., if counselor and client did not respond differentially to each other), it would be impossible to say that there was any exchange process or communication going on betweeen them (Barnlund, 1981).

Counseling in this regard may thus be understood as a process of mutual interpersonal influence (Johnson & Matross, 1977; Strong, 1968). Clients come to counselors for help and ask to be influenced, and counselors seek to influence clients by

their helping behaviors. At the same time, clients influence the ways in which counselors give help (Strong & Claiborn, 1982)--although this aspect of counseling has generally remained underexamined (Strong & Matross, 1977).

It has been argued by several theorists (e.g., Haley, 1963; Strong & Claiborn, 1982) that irrespective of the mutuality of influence within counseling, the balance of influence/power must favor the counselor if counseling is to be successful. Corrigan, Dell, Lewis and Schmidt (1980) and Dixon and Heppner (1981) have reviewed the now extensive literature on interpersonal influence in counseling. Within this literature, however, studies of the relative influence of counselors on clients and clients on counselors are virtually nonexistent (however see related studies by Heatherington & Allen, 1984; Lichtenberg & Barke, 1980; Tracey & Ray, 1984). One reason for this may be the general approach taken toward the operationalization of "influence" in counseling. Using social influence concepts borrowed from social psychology (see Strong, 1968), previous studies of influence in counseling have most generally approached influence from a "trait/factor" perspective (Johnson & Matross, 1977), defining influence (or more accurately, "influence potential") in terms of characteristics of the counselor (e.g., attractiveness, expertness, trustworthiness) and relating them to client change. While the influence of the client on the counselor has been acknowledged, similar "influence traits" for the client generally

have not been identified or specified, and determination of any differential between counselor and client in terms of their influence has not been possible.

In contrast to the trait/factor view of influence is the "dynamic/interdependence" view (Johnson & Matross, 1977). Rather than defining influence as a function of the static and discrete charactersitics of the influencer, influence from this perspective is viewed as a product of the interaction between persons. The basis of influence from this view is the interdependency of persons' actions; two persons influence each other to the extent to which they mediate the behaviors of each other. Influence in this sense is a property of the social relationship, rather than of any particular person; and relative influence within this perspective can be defined in terms of the different degrees of dependency between counselor and client responses or the "asymmetry" of their interdependence (Wampold, 1984).

The purpose of this study was to investigate the convergent validity of three statistical approaches to the study of the relative influence in counseling from a dynamic perspective. The three statistical indices--Tracey's topic determination index (Tracey, Heck & Lichtenberg, 1981; Tracey & Ray, 1984), Goodman and Kruskal's asymmetrical lambda statistic (Goodman & Kruskal, 1954; also see Castellan, 1979 and Wampold, 1984), and Shannon and Weaver's ambiguity index (Shannon & Weaver, 1949; also see

Attneave, 1959)--were computed on the counselor-client verbal interactions of 57 actual counseling interviews.

Method

Data

The data analyzed in this study were the coded counselor-client verbal interactions across 57 actual counseling interviews. The interviews comprised six full-length counseling cases conducted at a major eastern university's counseling center. Each of the six counseling cases was conducted by a different counselor.

[Insert Table 1 about here]

Procedure

Counselor and client utterances, defined as everything spoken by one of the persons between consecutive productions by the other, were coded using Tracey's topic initiation/topic follow system (Tracey & Ray, 1984). This coding system allows for investigations of topical influence within counseling interaction, i.e., who decides what will be discussed during the course of the session.[1] In accordance with that system, a person's utterance was coded as a "topic initiation" whenever it introduced (or changed) a topic of conversation within the interaction. A person's utterance was coded as a "topic follow" whenever it topically followed the preceding person's utterance.

The sequence of initiation/follow codes for each counseling

interview was summarized into a transition matrix (rows=antecedent responses; columns=consequent responses) for subsequent analyses (see Lichtenberg & Hummel, 1976). Because

[Insert Table 2 about here]

counselor utterances could not (by definition) follow counselor utterances, and client utterances could not follow client utterances, quadrants I and IV of the transition matrices were structurally empty.

Indices of influence.

1. Topic determination (Tracey & Ray, 1984). This index is defined as a ratio of a person's topic initiation successes to his/her total number of topic initiations. As previously noted, a person's utterance is coded as a topic initiation whenever s/he introduces a change in the topic of the counseling interaction. A topic initiation success occurs when a topic initiation is followed by the next speaker. Referring to Table 2, a counselor topic determination index is computed by dividing his/her topic initiation successes (f_{23}) by the total of his/her topic initiations ($f_{23}+f_{24}$). Likewise, a client's topic determination index is computed by dividing his/her topic initiation successes (f_{41}) by the total of his/her topic initiations ($f_{41}+f_{42}$). The individual with the larger topic determination index is said to evidence the greater influence (over the content of the counseling interaction).

2. Asymmetrical lambda (Goodman & Kruskal, 1954). This

index is designed to measure the relative decrease in the unpredictability of a consequent behavior (or variable) when the antecedent behavior (or variable) is known (Castellan, 1979). The index may vary from 0 to 1. It is 0 if and only if the antecedent is of no help in predicting the consequent (e.g., if the antecedents and consequents are independent), and it is 1 only if there is complete predictability. Referring to Table 2, separate asymmetrical lambda statistics were computed on quadrants II and III of each matrix and then compared. The individual (antecedent speaker) with the larger index was understood as evidencing the greater influence (i.e., producing the greater decrease in the unpredicability) on the other's topical behavior.

3. Ambiguity index (Shannon & Weaver, 1949). Derived from information theory (Shannon & Weaver, 1949), this index provides a measure of the uncertainty of a response given its preceding stimulus. In the context of this study, antecedent=stimulus and consequent=response. The larger the index for a given set of stimuli and responses, the greater the uncertainty of those responses (given the stimuli); i.e., the less influence the antecedent stimuli have in determining the consequent responses. Referring to Table 2, separate ambiguity indices were computed on quadrants II and III of each matrix and then compared. The individual (antecedent/stimulus speaker) with the smaller index was understood as evidencing the greater influence (i.e.,

providing the greater decrease in uncertainty) on the other's topical behavior in counseling.

Data analysis. The responses (initiate/follow) for each of the 57 counseling interviews were organized into separate transition matrices, and the three indices of influence were computed for the counselor and client for each interview matrix. For each interview and for each index, a determination was made of the influence of the counselor relative to that of the client. Counselors could be (a) more influential than the client, (b) "matched" with the client with respect to level of influence, or (c) less influential than the client. These ratings of counselor influence relative to the client were then analyzed for convergence in terms of their percentage of agreement and using Cramer's statistic V as an index of their association (Marascuilo & McSwenney, 1977).

Results

The relationships among the three proposed measures of interpersonal influence are summarized in Table 3. Agreement was greatest (80%) between Tracey's topic determination index and the ambiguity index. Very little agreement (9%) was found between the asymmetrical lambda statistic and the other two indices. Similarly, the Cramer statistic revealed a significant relationship only between the topic determination index and the ambiguity index. No reliable association was found between the lambda statistic and the other two indices.

Discussion

The results of this study were mixed. In general they suggest a statistically reliable convergence between the topic determination and ambiguity indices as indices of interpersonal influence (in this case, topical influence) in counseling, but no reliable relationship between these measures and the asymmetrical lambda statistic.

The nature of the lambda statistic and the nature of the data set analyzed in this study (specifically, the number of response categories across which counselor and client responses could vary, and the preponderance of a single type of response, i.e., "following") appeared to render this index unusable as an index of influence in this study. The lambda statistic is a measure of the relative decrease in the unpredictability of a consequent behavior when the antecedent behavior is known. Given the "biased" responding of both the counselors and the clients in the interviews (both favored "following" responses), knowledge of the preceding speaker's response generally contributed nothing to the prediction of the consequent response. Lambda statistics, therefore, were typically 0 for both the counselor as antecedent and the client as antecedent; and no differential in influence between the two speakers could be determined on this measure. The asymmetrical lambda statistic, however, may prove useful as a measure of influence under circumstances of broader response categories and more varied (less biased) responding on the part

of one or both of the interactants (see Wampold, 1984).

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Author Notes

An earlier version of this paper was presented at the annual convention of the American Psychological Association, Toronto, Canada, August, 1984.

Footnote

[1]It is understood that the flow topics within counseling is only one of the many areas over which influence may be exerted by the counselor and client; but nevertheless control of the topical content of counseling is of significance to the outcome of counseling (see Haley, 1974; Tracey & Ray, 1984).

Table 1

Counselor/client gender and number of interviews for each of the six counseling cases

Case	Gender		Number of Sessions
	Counselor	Client	
1	F	F	8
2	F	M	10
3	M	M	7
4	F	M	8
5	F	F	13
6	F	F	11

Table 2

Transition Matrix of Counselor-Client Interactions

Antecedent	Consequent: Counselor		Consequent: Client	
	Follow	Initiate	Follow	Initiate
Counselor				
Follow	0	0	f_{13}	f_{14}
	I		II	
Initiate	0	0	f_{23}	f_{24}
Client				
Follow	f_{31}	f_{32}	0	0
	III		IV	
Initiate	f_{41}	f_{42}	0	0

Table 3

Percent agreement and degree of association among the three indices of influence

Percent agreement

	Topic Determination	Ambiguity Index
Ambiguity Index	.80	
Asymmetrical Lambda	.09	.09

Degree of Association (Cramer's statistic V)

	Topic Determination	Ambiguity Index
Ambiguity Index	.375*	
Assymetrical Lambda	.169	.065

*p<.05